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(54) **System for selectively activating dispensers.**

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Description

This invention pertains to a system for automatically enabling selected ones of a number of dispensers to be operated in a predetermined sequence. While the invention broadly encompasses the dispensing of any goods such as soap, confectionery, linen or paper towels or the like, it is intended to be used with linen towel dispensers of the kind commonly found in washrooms, factories and other commercial locations.

It is relatively common for a commercial establishment to have more than one dispenser and since these dispensers are serviced only periodically, uneven usage results in certain of the dispensers being empty and others of the dispensers being partially used and still others being hardly used at all. In order to alleviate this uneven usage, it is proposed to provide a system wherein at least one and maybe more than one dispensers are made available for use while the other dispensers are unavailable for use. Upon the occurrence of an event, which may be the absence or near absence of the material in the dispenser, a triggering mechanism causes other dispensers to become available for use. By this system, it is proposed that the material to be dispensed, whether it is linen towels, soap or confectionery will be used in a more orderly and efficient manner. For soap and towels, this results in easier maintenance and a more complete use of the material to be dispensed while for confectionery and the like it results in fresher goods being available since none of the goods will be retained for prolonged periods of time, thus becoming stale.

GB-A-2 162 151 discloses a system for automatically enabling selected ones of a plurality of dispensers to be operated in a predetermined sequence comprising: a plurality of dispensers each having storage for a quantity of goods to be dispensed and a mechanism for dispensing stored goods in repeated dispensing operations, each dispenser having a storage condition wherein the stored goods are unavailable for use (see flap 3) and a dispensing condition wherein the stored goods can be dispensed by a user, control means associated with at least one dispenser, means associated with each dispenser having a control means for sensing an event and for activating said control means in response thereto, and actuating means operatively connected to said control means for changing the dispenser from the storage condition thereof to the dispensing condition thereof in response to said control means, whereby the stored goods in said dispenser become available to be dispensed by said dispensing mechanism to a user. The present invention improves on this arrangement by the features of the characterizing clause of claim 1.

An example of the invention will now be described with reference to the accompanying drawings in

which:

Figure 1 is a perspective view of a towel cabinet in a condition wherein the clean toweling is unavailable for use;

Figure 2 is an exploded view of the principal components of the towel cabinet of Figure 1 with the housing removed;

Figures 3 to 5 are perspective views like Figure 1 showing the positions of the towel cabinet as it is transformed from a condition wherein the toweling is unavailable for use to a condition in which the toweling is available for use; and

Figure 6 is a schematic representation of several sequential operations for a plurality of dispensers.

Referring now to the drawings there is disclosed in Figures 1-5, a representative dispenser 10 which in the illustration is for clean linen toweling; however, the invention is not limited to toweling and is applicable to the various items hereinbefore discussed and to others those skilled in the art will appreciate. The towel dispenser 10 includes a cabinet 11 having a pair of opposed side panels 12 interconnected by a pivoted cover 13. The cover 13 is shown in the closed position in the drawings but is pivoted to open to have soiled toweling removed and clean toweling replaced. It is common in the towel dispensing art to sense an event, such as the absence of toweling or the lack of tension, and to actuate a device such as a spring in response to the event to cause something to happen, such as the tail end of a towel roll being taken into a cabinet, for instance see U.S. patent application filed by Hartman et al., serial no. 164,456, March 4, 1988 (U.S. patent no. 4826282), Steiner et al., U.S. patent no. 3,502,383 issued March 20, 1970, P.W. Jespersen, U.S. patent no. 3,437,388 issued April 8, 1969 and to E.B. Bahnsen, U.S. patent no. 3,323,848 issued June 8, 1967, the disclosures of which are incorporated herein by reference. At the bottom of the present towel cabinet is a flexible shield 15 having a pair of spaced apart apertures 16 at the free end thereof. The flexible shield 15 is fixedly connected to the rear of the towel cabinet and is flexibly wrapped around the bottom of the towel cabinet and releasably connected inside the cover 13, as will be explained.

The towel dispenser 10 further includes a towel take-up mechanism 20 which is well known in the art having a shaft 21 which is motorized either by electrical means or by a spring. Around the shaft 21 is stored the used toweling 22, as is well known. A roll of clean toweling 25 is housed within the cabinet 11 and has a loop 26 which in use extends downwardly and below the cabinet for ready access by an intended user.

The towel dispenser 10 has a transmitter 30 connected to the towel take-up mechanism 20 by leads 31 and an antenna 32. A receiver 35 is connected by